

# Assessing Potential Health Impacts of Proposed Asphalt Plant and Rock Crushing Plant in Westford, MA

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# Outline of Presentation

- DPH/BEH provided technical assistance regarding hot mix asphalt plants and health effects
  - Review of application for new hot mix asphalt drum mix plant and rock crushing plant proposed for use in Westford
  - Summary of the information provided in letters to BOH
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# Potential health concerns

- Air pollutants emitted from HMA facility
    - Criteria pollutants
      - particulate matter, volatile organic compounds (VOCs), carbon monoxide, sulfur dioxide, nitrogen oxides
    - Hazardous Air Pollutants (HAPs)
      - volatile HAPs, polycyclic aromatic hydrocarbons (PAHs), metals, diesel exhaust
  - Potential health impacts
    - Cardiovascular and respiratory effects
      - For example, facility contributes to background levels of particulate matter, which is associated with increase risk of heart attack and exacerbation of asthma in populations with pre-existing diseases
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# Asthma and Air Pollution Are Legitimate Concerns

- A large number of epidemiologic studies have reported associations between ambient air pollution exposure and asthma.
  - In epidemiologic studies of traffic exposures and asthma, usually individuals living beyond 150 to 200 meters from roadways are not considered to be greatly impacted. But these studies have consistently found a higher risk of asthma among those living within about 150 meters of roadways and that the risk increased as distance decreased.
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# Pediatric Asthma Prevalence in Westford

- **State**  
**10.9% (10.8-11.0)**
  - **Town**  
**10.5% (9.6-11.5)**  
**% is not statistically significantly different from the state**
  - **Select Schools Near Site**  
**Rita E. Miller 15.3% (11.8-18.8)**  
**% is statistically significantly higher than the state**
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# Hot Mix Asphalt (HMA) Plant and Rock Crushing Plant

- Emissions from HMA Facility
    - 'Stack' emissions – regulated by control equipment in air permit and included in air quality modeling
      - drum mix plant
      - hot oil heater
    - 'Fugitive' emissions – not regulated
      - asphalt cement storage farm
      - mixing, storage and loading of asphalt product
      - storage piles, screens, conveyers (e.g., aggregate, recycled asphalt)
      - truck load-out
      - mobile emissions (e.g., loaders, onsite/offsite diesel trucks)
  - Emissions from Rock Crushing Plant
    - Course and fine particulate matter
    - Mobile sources
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	<b>Sources of emissions at proposed asphalt and rock crusher facilities</b>	<b>Estimated and modeled for MA DEP Permit</b>
<b>Process emissions</b>	No. 2 fuel/natural gas drum mix plant	<b>Yes</b>
	Hot oil heater	<b>Yes</b>
<b>Fugitive emissions</b>	Loading trucks with asphalt	<b>No</b>
	Asphalt storage	<b>No</b>
	Material handling	<b>No</b>
	Fugitive emissions from loading trucks	<b>No</b>
<b>Mobile sources</b>	Diesel Trucks to facility	<b>No</b>
	Diesel Trucks leaving facility with asphalt	<b>No</b>
	Diesel Trucks delivering recycled asphalt, oil, fuel etc	<b>No</b>
<b>Rock crushing source</b>	Rock-crushing plant including rock crushers, screen and conveyor belts	<b>No</b>

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## Issues that should be address by air quality and emissions services

- Comprehensive emissions estimates and air dispersion modeling of fugitive and mobile source emissions (e.g., particulate matter)
  - Identify sensitive populations and potential impacts
  - Further analysis of noise impacts
  - Explore mitigation of emissions (e.g., diesel retrofit technology)
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